2 October 1969

NPIC R&D PROGRAM
FY 1971

C. Imagery

1. Overhead Photography

a. Imagery Interpretation Process Research
Image Interpretation Research
Unconventional Imagery

b. Imagery Information Technology
Chip R&D Investigations

c. Image Analysis and Manipulation
Image Analysis
Image Manipulation Study

d. Image Interpretation Instruments and Techniques
Auto Target/Pattern Recognition
UV Rear Projection Viewer
PI Correlated Stereo Maker

e. Reproduction
Dry Silver and Non-Silver Process
Auto Dodging Equipment

25X1 [redacted]

g. Test and Evaluation
Test and Evaluation Studies

25X1 2. [redacted]

TOTAL

25X1 [redacted]

FY 1971 R&D PROGRAM

CATEGORY & TITLE	1971	PRIORITY
VIEWING & DISPLAY		
UV Rear Projection Viewer (Fab)		(3)
Image Intensifier Screen		
Spectrazonal Color Viewer		(3)
TOTAL		
STORAGE & RETRIEVAL		
Collateral Storage & Retrieval		(2)
Chip Storage & Retrieval		(1)
TOTAL		
SCANNING & SORTING		
Rear Projection Automated Stereo Scanners Study		(5)
TOTAL		
OTHER		
Mensuration Equipment S-of-A		(2)
PI Correlated Stereogram Maker		(3)
Precise Measurements Study		(1)
T&E Viewing Equipment, MTF		(2)
ATR		(4)
Automatic Transport of MTLS		(1)
Automatic Data Reader		(2)
Automatic Report Writing		(2)
IIS Product Improvement		(3)
Audio Cueing		(5)
Photo Image Manipulation Viewer Study		(3)
Image Analysis Research		(1)
(Optics, photo, image, restoration, & engineering)		
25X1		(2)
Automatic Dodging Equipment		(4)
Image Interpretation Research		(1)
Rapid Access Color Viewer Printer		(4)
25X1 Contract T&E, Dry Silver, MTL & Equipment		(1)
Dry, non-silver materials & equipment		(5)
Reuseable Storage Media		

25X1

CATEGORY & TITLE	1971	PRIORITY
Single-Layer Color Reproduction		(2)
Automatic Stereoscanning Chip Viewer		(1)
Product Improvement/Updating		(1)
Display Optics Development		(1)
Interim System Development		(1)
TOTAL		

25X1

FY 1971 R&D PROGRAM

	CATEGORY & TITLE	1971	PRIORITY
	VIEWING & DISPLAY		
1	✓UV Rear Projection Viewer (Fab)		(3)
2	~~Image Intensifier Screen~~		(3)
3	✓Spectrazonal Color Viewer		
	TOTAL		
	STORAGE & RETRIEVAL		
	~~✓Collateral Storage & Retrieval~~		(2)
4	✓Chip Storage & Retrieval		(1)
	TOTAL		
	SCANNING & SORTING		
5	✓Rear Projection Automated Stereo Scanners Study		(5)
	TOTAL		
	OTHER		
6	✓Mensuration Equipment S-of-A		(2)
7	✓PI Correlated Stereogram Maker		(3)
8	✓Precise Measurements Study		(1)
9	✓T&E Viewing Equipment, MTF		(2)
10	✓ATR		(4)
11	✓Automatic Transport of MTLS		(1)
	~~✓Automatic Data Reader~~		(2)
	~~✓Automatic Report Writing~~		(2)
12	✓IIS Product Improvement		(3)
13	✓Audio Cueing		(5)
14	✓Photo Image Manipulation Viewer Study		(3)
15	✓Image Analysis Research (Optics, photo, image, restoration, & engineering)		(1)
16	[redacted]		(2)
17	✓Automatic Dodging Equipment		(4)
18	✓Image Interpretation Research		(1)
19	✓Rapid Access Color Viewer Printer		(4)
20	✓Contract T&E, [redacted] Dry Silver, MTL & Equipment		(1)
21	✓Dry, non-silver materials & equipment		(5)
22	~~✓Reuseable Storage Media~~		

25X1

25X1

25X1

	CATEGORY & TITLE	1971	PRIORITY
23	✓Single-Layer Color Reproduction		(2)
24	✓Automatic Stereoscanning Chip Viewer.		(1)
25	~Product Improvement/Updating		(1)
26	✓Display Optics Development		(1)
27	✓Interim System Development		(2)
28	Management Systems Support		
	TOTAL		
	TOTAL		

25X1

SECRET

25X1

25X1 I. Image Interpretation Process Research
Imagery Interpretation Research
25X1

II. Image Analysis & Manipulation
25X1 Imagery Analysis
Photo Image Manipulation Viewer Study
25X1

III. Information Technology
25X1 Chip Storage & Retrieval
Automatic Transport of Materials
25X1

IV. Reproduction Materials & Equipment
25X1 Dry Silver & Non-Silver Processes
25X1 Automatic Dodging Equipment

V. Image Interpretation Equipment & Techniques
25X1 Automatic Target Recognition
PI Correlated Stereogram Make
Ultra Violet Rear Projection Viewer

VI. Mensuration Equipment & Techniques
25X1 Mensuration Equipment
25X1 Precise Measurement Studies

VII. Test & Evaluation Equipment & Techniques
25X1

25X1 VIII.

IX. Systems Integration Support

25X1 TOTAL

SECRET

67 Budget File

25X1

25X1

PROJECT MONITOR	PROJECT	CONTRACTOR	FINAL PACKAGE	CURRENT STATUS-22 APRIL 1969
25X1				
	Wide Field Filar Eyepiece	Unknown	28 April	wrote draft of AR and gave it to Dietel on 16 April. 25X1
	Simulated Imagery		Complete	25X1
	Micro Densitometer Mod.		22 April	Memo for Data re-draft of paragraph 2, proposals reviewed, paperwork for in PPB
	Ground Order Battle		28 April	Proposal here, is writing paperwork 25X1
	Precise Measurement Study		Available	Awaiting OK for in-house 25X1
	Exploitation Systems Integ.		PPS	Approval Request complete 25X1
	Specialized Rear Projection Viewer		28 April	New proposal due from on 25th, paperwork in draft form.
	Advanced Graphic Automation		25 April	for review 25X1

25X1

25X1

PROJECT MONITOR	PROJECT	CONTRACTOR	AMOUNT	FINAL PACKAGE	CURRENT STATUS-22 APRIL 1969
	Dry Silver Processing			28 April	redoing memo for 25X1 25X1
	Quality Asses. Direct View Equip.			25April	Approval Request in draft
	Chip R&D Implem. Inv.	Unknown		20 May	Rewrite of draft D.O. in office, on approval will send to O/L for RFP 25X1

SECRET

FY-71 R&D BUDGET

CATEGORY & ITEM	COST	PROGRAM ELEMENT	REMARKS
VIEWING DISPLAY			
25X1 1. UV Rear Projection Viewer		Image Analysis	Under a current FY-68 contract, UV Rear Projection equipment is proceeding through feasibility demonstrations. As a consequence, a UV Rear Projection Viewer line item is contained in our FY-71 budget to cover the cost of fabrication of a prototype viewer.
2. Spectrazonal Color Viewer		Image Analysis	Construction of a Spectrazonal Color Viewer, a line item conceived in anticipation of the need for specialized viewers for handling exotic materials such as bi-color.
STORAGE & RETRIEVAL			
3. Chips Storage & Retrieval		Imagery Services	This is a level of effort for the anticipated development of an optimal chip storage and retrieval system, and for the production, improvement, and updating of chip equipment to be developed in FY-69 and FY-70.
SCANNING & SORTING			
4. Rear Projection, Automated Stereo Scanner Study		Image Analysis	This continues a second phase funding for a 1970 project covering the development of a Rear Projection version of the Automatic Stereo Scanner. This portion would be a continuation of the basic design and feasibility breadboard phase, culminating in prototype development during 72 and 73.

SECRET

CATEGORY & ITEM	COST	PROGRAM ELEMENT	REMARKS
OTHER			
25X1 5. Mensuration Equipment State-of-the-Art		Image Analysis	Equipment under the general heading of Mensuration Equipment is identified in anticipation of our development of standard equipment incorporating state-of-the-art advances in interferometric photo measuring equipment. Definition of this project is awaiting the results of studies to be carried out under the FY-69 program.
6. PI Correlated Stereogram Maker		Image Analysis	The PI Correlated Stereogram Maker is a special automatic photographic printer which prints a complete stereogram (both sides of a stereo pair) in correct orientation and with the imagery optically rectified so that stereo fusion can take place. One instrument would support many PI's and permit the use of simpler and cheaper microstereoscopes in the future.
7. Precise Measurement Study		R&D Management Support	Precise Mensuration Study initiated in FY-69 will contribute heavily to this development, the intent of this study being to isolate the limiting factors -- the weakest link -- in the mensuration process, so that we can greatly reduce cost of future developments in precise measurement equipment.
8. T&E Viewing Equipment NTF		R&D Management Support	Funding is to develop the specialized equipment necessary for checking parametric performance in photomaterials, such as measuring how well the contractor has performed under a contract with respect to meeting original specifications.
9. ATR		Image Analysis	Continuation of the Automatic Target Recognition program is anticipated, although major emphasis during FY-71 will have shifted from the current Automatic Cloud Screening program to Automatic Classification techniques and equipments and to basic studies in Change Detection.
10. Automatic Transport Materials		Imagery Service	Automatic Transport of Materials is an area which is much broader than the title indicates, in that it also encompasses storage and retrieval, material accountability, and transportation of materials to and from the library file and between the operational users,
11. IIS Product Improvement		Imagery Service	Funding is for modifications (for interface problems) which could prove necessary to improve the present Integrated Information System.

CATEGORY & ITEM	COST	PROGRAM ELEMENT	REMARKS
OTHER (con't)			
25X1 11. Audio Cueing		Image Analysis	This item anticipates that with the advent of real time transmission systems, some types of highly perishable imagery will have to be read out very rapidly, so that adequate utilization of even limited collateral material would become very difficult without reduction of the time required to scan it. It has been suggested that one possible way of improving this process would be through the utilization of audio-cueing devices and techniques to transmit collateral information to the interpreter verbally.
13. Image Analysis Research (Optics, photo, image restoration and eng.)		R&D Management Support	This highlights basic and applied research and development which will be essential if we are to more fully understand and comprehend the fundamental nature of the photographic image and of the contributors to quality in the photographic process. 25X1
[redacted]			
25X1 15. Automatic Dodging Equipment		Imagery Services	The design and fabrication of operationally suitable automatic dodging equipment is equipment designed to automatically print photography while at the same time sensing and equalizing the really critical range of densities as the entire format is printed.
16. Image Interpretation Research		R&D Image Supp. & Image Analysis	This incorporates and expands on the Image Interpretation Research program currently being conducted with [redacted] As at present, major emphasis will be on establishment of performance measures in both interpretation and mensuration, on the analysis of human-operational functions, and on fundamental experimentation in the man-machine interface item. 25X1
17. Photo Image Manipulation Viewer		Image Analysis	Funding is for continuing a study of an advanced concept, photo image manipulation viewer to be fabricated in FY-72.

	CATEGORY & ITEM	COST	PROGRAM ELEMENT	REMARKS
25X1 18.	Rapid Access Color Viewer Printer		Image Analysis	Funds are for the development of the Rapid Access Color Viewer/ Printer, a device for scanning, viewing, selecting and selectively printing specialized high resolution color materials.
25X1 19.	Contract T&E, [ ] Dry Silver Material and Equipment		Imagery Service	Development should have progressed on [ ] Dry Silver materials to the point where we would be building prototype equipment for the utilization of the reversal process [ ] films, and integrating the entire [ ] system into the Center. 25X1 25X1 25X1
20.	Dry Non Silver Materials & Equipment		Imagery Services	Funding also includes dry non-silver materials techniques and equipment in anticipation of possible breakthroughs in the state-of-the-art in non-silver materials, e.g., [ ] photo polymers. 25X1
21.	Automatic Stereo Scanning Chip Viewer		Image Analysis	Automatic Stereo Scanner chip viewer incororates in one piece of equipment the better features of both the Wide-Field High Power Anamorphic Stereoviewer and the [ ] Stereo Scanning equipment. 25X1
22.	Product Improvement/Updating		Image Analysis	This is for the updating covered in item #3.
23.	Display Optics Development		Image Analysis	Item supports directly the design and development of electronic and optical display components. Also anticipated is further development of certain key components already designed and tested for feasibility under our FY-70 program. The major area of interest is in cathode ray tube and laser display systems, in highly sophisticated imagery manipulation systems, and in on-line [ ] photographic recording systems. 25X1
24.	Interm System Development		Image Analysis	Provides for interm real time exploitation system development, utilizing existing components and technology.
25.	Management System Support		Management Support	This is specialized equipment or systems development required to support NPIC's Management Information Systems. No particular line items have been assigned to this category at this time.
	Grand Total			

Projected FY-71 Through -75 R&D Budget

FY-1971		71	Priority (71)	72	73	74	75	Remarks
								Narrative Descriptions (FY-71)
1. Standard PI Instruments/ Techniques	UV Rear Projection Viewer (Fab) Spectrazonal Color Viewer Mensuration Equipment S-of-A	[redacted]						By FY-71 the emphasis in this program area will be on prototypes of new and innovative devices, rather than on perfection of conventional equipment as at present. Under a current FY-68 contract, UV Rear Projection equipment is proceeding through feasibility demonstrations. As a consequence, a UV Rear Projection Viewer line item is contained in our FY-71 budget to cover the cost of fabrication of a prototype viewer. Funds are included also for the construction of a Spectrazonal Color Viewer, a line item conceived in anticipation of the need for specialized viewers for handling exotic materials such as bi-color. (It had been anticipated that the study work on this project would have been completed under our FY-69, budget but the system parameters and the necessary equipment have not been well enough defined; and we do not recommend its pursuit before FY-71). A third possibility for inclusion in this category comes under the general heading of Mensuration Equipment, and is identified in anticipation of our development of standard equipment incorporating state-of-the-art advances in interferometric photo measuring equipment. Definition of this project is awaiting the results of studies to be carried out under the FY-69 program.
2. Unique Capital Equipment	PI Correlated Stereogram Maker Rear Proj. Automated Stereo Scanners Study Precise Measurements Study							This program area is the principal means of highlighting major, one-of-a-kind developments against the specific needs of some Center activity. The first item under this category is the PI Correlated Stereogram Maker. This budget shows additional funding to continue a project which will be started in FY-70 (described in previous FY-70 narrative listings). The next item is the continuation of second phase funding for a 1970 project covering the development of a Rear Projection version of the Automated Stereo Scanner. This portion would be a continuation of the basic design and feasibility breadboard phase,

25X1

FY-1971		71	Priority (71)	72	73	74	75	Remarks
								culminating in prototype development during 72 and 73. The basic Precise Mensuration Study initiated in FY-69 will contribute heavily to this development, the intent of this study being to isolate the limiting factors--the weakest link--in the mensuration process, so that we can greatly reduce cost of future developments in precise measurement equipment.
. Test/Control Instruments	T&E Viewing Equipment MTF							25X1 This category incorporates funding to develop the specialized equipment necessary for checking parametric performance in photomaterials, such as measuring how well the contractor has performed under a contract with respect to meeting original specifications. Such equipment can, in some cases, be used at the contractor's plant, by the Development & Engineering Division project officers, as well as by the Equipment Performance Division's Test and Evaluation Staff when testing at NPIC.
4. PI Machine Aids	ATR Automatic Transport of MTLS Automatic Data Reader Automatic Report Writing							Under this category is incorporated the anticipated continuation of the Automatic Target Recognition program, although major emphasis during FY-71 will have shifted from the current Automatic Cloud Screening program to Automatic Classification techniques & equipments and to basic studies in Change Detection. Also included under this category is preliminary development in Automatic Transport of Materials, an area which is much broader than the title indicates, in that it also encompasses storage & retrieval, material accountability, and transportation of materials to and from the library file and between the operational users. Other work in this category will be applied in the area of advanced data block readers to speed up extracting attitudinal information from the film, and equipment to automate the report writing and editing functions and to further the development of automated graphics techniques. This latter equipment will be developed to semi-automate the actual dissemination of the extract PI information, in final form.

FY-1971		71	Priority (71)	72	73	74	75	Remarks
5. PI Support Systems/ Data Base	IIS Product Improvement Audio Cueing Collateral Storage & Retrieval							Incorporated in the PI Support Systems area is sufficient funding for modifications and interface problems which could prove necessary to improve the present Integrated Information System. The second item anticipates that with the advent of real time transmission systems, some types of highly perishable imagery will have to be read out very rapidly, so that adequate utilization of even limited collateral material would become very difficult without reduction of the time required to scan it. It has been suggested that one possible way of improving this process would be through the utilization of audio-cueing devices and techniques to transmit collateral information to the interpreter verbally; this project title reflects that possibility, or could be changed to reflect some more promising approach. The final item is incorporated in this category in anticipation of some other as yet poorly-defined collateral storage and retrieval problems. It is intended that this effort be utilized to more efficiently provide the photo interpreter with essentially the present range of collateral support, but in a better form and on a more timely basis.
6. Image Analysis/Manipulation/Transmission	Photo Image Manipulation Viewer Study Image Analysis Research Optics, Photo, Image Restoration & Engineerin [redacted] Automatic Dodging Equipmer							This category highlights the more basic research & development which will be essential if we are to more fully understand and comprehend the fundamental nature of the photographic image and of the contributors to quality in the photographic process. The category contains funding to continue a study of an advanced concept, photo image manipulation viewer to be fabricated in FY-72, and provides for the design and fabrication of operationally suitable automatic dodging equipment, i.e., equipment designed to automatically print photography while at the same time sensing and equalizing the relatively critical range of densities as the entire format is printed. In addition this category includes a continuation of the basic [redacted] program started in FY-69, and provides the means for feasibility demonstrations of new specialized viewing, measuring, and mensuration equipment.

25X1

25X1

25X1

FY-1971		Priority (71) 71	72	73	74	75	Remarks
7. PI Process Research	Image Interpretation Research						This category incorporates and expands on the Image Interpretation Research program currently being conducted with [redacted] As at present, major emphasis will be on establishment of performance measures in both interpretation and mensuration, on the analysis of human-operational functions, and on fundamental experimentation in the man-machine interface. 25X1 25X1
8. Reproduction Materials/ Equipment 25X1	Rapid Access Color Viewer Printer Contract T&E, [redacted] Dry Silver, MTL & Equipment Dry, Non-Silver Materials & Equipment Reuseable Storage Media Single-Layer Color Reproduction						This category identifies the specific funds for the development of the Rapid Access Color Viewer/Printer, a device for scanning, viewing, selecting and selectively printing specialized high resolution color materials. However, the principal thrust is toward the [redacted] Dry Silver materials, comprising a larger 25X1 and more general area of work. Development should have progressed to the point where we would be building prototype equipment for the utilization of the reversal process [redacted] films, and integrating the 25X1 entire [redacted] system into the Center. Additional funding is also included for dry non-silver materials techniques and equipment in anticipation of possible breakthroughs in the state-of-the-art in non-silver materials, e.g., [redacted] Photo polymers. 25X1 25X1
9. Chip System Development	Automatic Stereo Scanning Chip Viewer Chip Storage & Retrieval Product Improvement/Updating						This category provides a level of effort for the anticipated development of an optimal chip storage and retrieval system, and for the production, improvement, and updating of chip equipment to be developed in FY-69 and FY-70, including the design and fabrication of an Automatic Stereo Scanner chip viewer incorporating in one piece of equipment the better features of both the Wide-Field High Power Anamorphic Stereoviewer and the Itek Stereo Scanning equipment.

FY-1971		Priority (71) 71	72	73	74	75	Remarks
10. Real Time PI	Display Optics Development Interim System Development						This category supports directly the design and development of electronic and optical display components, and provides for interim system design and development. Also anticipated is further development of certain key components already designed and tested for feasibility under our FY-70 program. The major area of interest is in cathode ray tube and laser display systems, in highly sophisticated imagery manipulation systems, and in on-line laser/photographic recording systems. The emphasis is thus on components in FY 71, with fabrication of the actual operational system deferred until later.
11. Management Systems Support							This category includes specialized equipment or systems development required to support NPIC's Management Information Systems. No particular line items have been assigned to this category at this time.
TOTALS							

25X1

FY-71 R&D BUDGET

CATEGORY & ITEM	COST	PROGRAM ELEMENT	REMARKS
VIEWING DISPLAY			
25X1			
1. UV Rear Projection Viewer		Image Analysis	Under a current FY-68 contract, UV Rear Projection equipment is proceeding through feasibility demonstrations. As a consequence, a UV Rear Projection Viewer line item is contained in our FY-71 budget to cover the cost of fabrication of a prototype viewer.
2. Spectrazonal Color Viewer		Image Analysis	Construction of a Spectrazonal Color Viewer, a line item conceived in anticipation of the need for specialized viewers for handling exotic materials such as bi-color.
STORAGE & RETRIEVAL			
3. Chips Storage & Retrieval		Imagery Services	This is a level of effort for the anticipated development of an optimal chip storage and retrieval system, and for the production, improvement, and updating of chip equipment to be developed in FY-69 and FY-70.
SCANNING & SORTING			
4. Rear Projection, Automated Stereo Scanner Study		Image Analysis	This continues a second phase funding for a 1970 project covering the development of a Rear Projection version of the Automatic Stereo Scanner. This portion would be a continuation of the basic design and feasibility breadboard phase, culminating in prototype development during 72 and 73.

CATEGORY & ITEM	COST	PROGRAM ELEMENT	REMARKS
OTHER			
25X1 5. Mensuration Equipment State-of-the-Art		Image Analysis	Equipment under the general heading of Mensuration Equipment is identified in anticipation of our development of standard equipment incorporating state-of-the-art advances in interferometric photo measuring equipment. Definition of this project is awaiting the results of studies to be carried out under the FY-69 program.
6. PI Correlated Stereogram Maker		Image Analysis	The PI Correlated Stereogram Maker is a special automatic photographic printer which prints a complete stereogram (both sides of a stereo pair) in correct orientation and with the imagery optically rectified so that stereo fusion can take place. One instrument would support many PI's and permit the use of simpler and cheaper microstereoscopes in the future.
7. Precise Measurement Study		R&D Management Support	Precise Mensuration Study initiated in FY-69 will contribute heavily to this development, the intent of this study being to isolate the limiting factors -- the weakest link -- in the mensuration process, so that we can greatly reduce cost of future developments in precise measurement equipment.
8. T&E Viewing Equipment NTF		R&D Management Support	Funding is to develop the specialized equipment necessary for checking parametric performance in photomaterials, such as measuring how well the contractor has performed under a contract with respect to meeting original specifications.
9. ATR		Image Analysis	Continuation of the Automatic Target Recognition program is anticipated, although major emphasis during FY-71 will have shifted from the current Automatic Cloud Screening program to Automatic Classification techniques and equipments and to basic studies in Change Detection.
10. Automatic Transport Materials		Imagery Service	Automatic Transport of Materials is an area which is much broader than the title indicates, in that it also encompasses storage and retrieval, material accountability, and transportation of materials to and from the library file and between the operational users,
11. IIS Product Improvement		Imagery Service	Funding is for modifications (for interface problems) which could prove necessary to improve the present Integrated Information System.

CATEGORY & ITEM	COST	PROGRAM ELEMENT	REMARKS
OTHER (con't)			
12. Audio Cueing			
13. Image Analysis Research (Optics, photo, image restoration and eng.)		R&D Management Support	This highlights basic and applied research and development which will be essential if we are to more fully understand and comprehend the fundamental nature of the photographic image and of the contributors to quality in the photographic process.
15. Automatic Dodging Equipment		Imagery Services	The design and fabrication of operationally suitable automatic dodging equipment is equipment designed to automatically print photography while at the same time sensing and equalizing the really critical range of densities as the entire format is printed.
16. Image Interpretation Research		R&D Image Supp. & Image Analysis	This incorporates and expands on the Image Interpretation Research program currently being conducted with [redacted] As at present, major emphasis will be on establishment of performance measures in both interpretation and mensuration, on the analysis of human-operational functions, and on fundamental experimentation in the man-machine interface item.
17. Photo Image Manipulation Viewer		Image Analysis	Funding is for continuing a study of an advanced concept, photo image manipulation viewer to be fabricated in FY-72.

CATEGORY & ITEM	COST	PROGRAM ELEMENT	REMARKS
19. Rapid Access Color Viewer Printer		Image Analysis	Funds are for the development of the Rapid Access Color Viewer/ Printer, a device for scanning, viewing, selecting and selectively printing specialized high resolution color materials.
Contract T&E, [redacted] Dry Silver Material and Equipment		Imagery Service	Development should have progressed on [redacted] Dry Silver materials to the point where we would be building prototype equipment for the utilization of the reversal process [redacted] films, and integrating the entire [redacted] system into the Center.
20. Dry Non Silver Materials & Equipment		Imagery Services	Funding also includes dry non-silver materials techniques and equipment in anticipation of possible breakthroughs in the state-of-the-art in non-silver materials, e.g. [redacted] photo polymers.
21. Automatic Stereo Scanning Chip Viewer		Image Analysis	Automatic Stereo Scanner chip viewer incororates in one piece of equipment the better features of both the Wide-Field High Power Anamorphic Stereoviewer and the [redacted] Stereo Scanning equipment.
22. Product Improvement/Updating		Image Analysis	This is for the updating covered in item #3.
23. Display Optics Development		Image Analysis	Item supports directly the design and development of electronic and optical display components. Also anticipated is further development of certain key components already designed and tested for feasibility under our FY-70 program. The major area of interest is in cathode ray tube and laser display systems, in highly sophisticated imagery manipulation systems, and in on-line laser/photographic recording systems.
24. Interm System Development		Image Analysis	Provides for interm real time exploitation system development, utilizing existing components and technology.
25. Management System Support		Management Support	This is specialized equipment or systems development required to support NPIC's Management Information Systems. No particular line items have been assigned to this category at this time.
Grand Total			